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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,737	12/05/2003	Marina E. Kondakova	87241AEK	1342

7590 09/13/2006
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EXAMINER	
GARRETT, DAWN L	
ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/729,737

Applicant(s)

KONDAKOVA ET AL.

Examiner

Dawn Garrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-30 is/are pending in the application.
- 4a) Of the above claim(s) 5, 17 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 4, 6-16, 18-22 and 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action is responsive to the amendment dated July 14, 2006 and the declaration signed July 14, 2006. Claim 1 was amended. Claim 2 is cancelled. Claims 1 and 3-30 are present in the application. Applicant previously elected for the phosphorescent guest material “tris(2-phenyl-pyridinato-N,C^{2'})iridium(III)”, as the host material carbazole material “4,4'-N,N'-dicarbazole-biphenyl”, and as the efficiency enhancing material “4,4',4''-Tris[3-methylphenyl]pheyamino]triphenylamine”. Claims 5, 17, and 23 are withdrawn as being directed to non-elected subject matter. Claims 1, 3, 4, 6-16, 18-22 and 24-30 are currently under consideration.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3, 4, 6-16, 18-22 and 24-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Amended claim 1 recites “wherein the efficiency-enhancing material” and the efficiency-enhancing material is not previously set forth in the claim. Accordingly, it is unclear if the efficiency-enhancing material is one of the previously recited materials (i.e., phosphorescent guest material, a hole- and electron transporting host material) or if the efficiency-enhancing material is a separate and distinct material. Since it is unclear if the compound is separate or

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further limits another recited material, the claim is considered indefinite. Clarification and/or correction are required.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. The rejection of claim 2 under 35 U.S.C. 103(a) as being unpatentable over Seo et al. (US 2002/0086180 A1) is withdrawn due to the cancellation of claim 2.

6. Claims 1, 3, 4, 6-16, 18-22 and 28-30 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. (US 2002/0086180 A1). Seo sets forth organic luminescent elements comprising a bipolar-natured mixed layer comprising a hole transporting material and an electron transporting material (see abstract). The mixed region further comprises luminescent material (see par. 154 and 187). Seo sets forth an example comprising a bipolar mixed layer comprising 4,4'-N,N'-dicarbazole-biphenyl (referred to as "CBP") and hole transporting compound NPD (see par. 251, page 16). Light emitting material Ir(ppy)₃ is doped into the bipolar-natured mixed layer (see par. 252). With regard to claims 11-14, the amount of Ir(ppy)₃ is 6% wt. Although Seo does not set forth an example using 4,4',4''-Tris [3methylphenyl) phenylamino] triphenylamine (referred to as MTDATA) in place of NPD, Seo teaches MTDATA is an equivalent hole transporting material (see par. 183). Accordingly, it would have been obvious to one of ordinary skill in the art to have formed a device with a bipolar-natured mixed layer comprising CBP, Ir(ppy)₃ and MTDATA, because Seo clearly teaches MTDATA and NPD are similar hole transporting materials. Because Seo discloses the same materials as applicant, the properties of claim 1 are deemed to be inherently met by the reference. With regard to claim

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23, it would have been obvious to one of ordinary skill in the art to have further incorporated an additional host material other than CBP, because absent evidence otherwise, “[i]t is *prima facie* obvious to combine two compositions taught by the prior art as useful for the same purpose, in order to form a third composition which is to be used for the very same purpose” (see *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980); *In re Susi*, 169 USPQ 423, 426 (CCPA 1971); *In re Crockett*, 126 USPQ 186, 188 (CCPA 1960)). With regard to claims 28-30, Seo discloses displays incorporating the devices (see Figures).

7. Claims 24-27 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Seo et al. (US 2002/0086180 A1) in view of Tokito et al. (US 2003/0091862). Seo et al. is relied upon as set forth above. Seo et al. teaches incorporating a green phosphorescent material in the light emitting layer (the iridium compound), but fails to teach specifically a red or blue phosphorescent material may be also be used. Tokito et al. teaches in analogous art the use of blue or red phosphorescent material as equally suitable for a light emitting device as a green phosphorescent material (see par. 117). It would have been obvious for one of ordinary skill in the art at the time of the invention to have made a device comprising red emitting and blue emitting phosphorescent compounds in addition to the green emitting iridium compound, because Tokito et al. teaches red emitting and blue emitting phosphorescent compounds that are equally suitable as a phosphorescent material in a light emitting layer. It would have been obvious to have incorporated additional luminescent materials, because they are useful for the same purpose (i.e., light emission). Seo et al. also fails to teach a color filter is used in the device. Tokito et al. teaches in analogous art it is well known to incorporate a filter into a light emitting device in order to achieve a desired color (i.e., white light) (see par. 70). It would have

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been obvious to one of ordinary skill in the art to have further included a color filter in the Seo et al. device, because Tokito et al. teach a filter is a commonly known means of achieving desired light emission color.

Response to Arguments

8. Applicant's arguments filed July 14, 2006 have been fully considered but they are not persuasive.

The declaration under 37 CFR 1.132 filed July 14, 2006 is insufficient to overcome the rejection of claims 1, 3, 4, 6-16, 18-22 and 24-30 based upon 35 U.S.C. 103(a) as set forth in the last Office action because: The data discussed in the declaration is only based on one example of Seo et al. While Seo et al. may teach materials outside of the parameters claimed, applicant has not demonstrated unexpected results for picking materials based upon triplet energy values. The examiner notes that non-preferred embodiments can be indicative of obviousness (see *In re Lamberti*, 192 USPQ 278 (CCPA 1976); *In re Boe*, 148 USPQ 507 (CCPA 1976); *In re Kohler*, 177 USPQ 399 (CCPA 1973)), and a reference is not limited to working examples (see *In re Fracalossi*, 215 USPQ 569 (CCPA 1982)). While Seo does not set forth an *example* using 4,4',4''-Tris [3methylphenyl] pheylamino] triphenylamine (referred to as MTDATA) in place of NPD, Seo teaches MTDATA is an equivalent hole transporting material (see par. 183). Seo renders obvious all of the required components of applicant's device. In addition, the energies levels associated with these compounds are considered inherent to these same compounds.

The specification examples shown in Table 1 only compare devices with varying levels of MTDATA and no MTDATA. Seo et al. renders obvious the incorporation of MTDATA (see rejection), so these examples are insufficient to overcome the reference. The declaration

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examples only show one set of materials disclosed by Seo et al. to demonstrate the specific set of materials are outside the parameters of the claims. Seo et al. renders obvious materials required by the claims. It does not appear that unexpected results have been clearly demonstrated over the teachings of Seo et al. at the present time.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dawn Garrett
Primary Examiner
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